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2005 FORD Explorer Sport OEM Service and Repair Workshop Manual

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Sample

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This pinpoint test is written to address all speed sensor electrical faults. For each test step, only the circuits related to the DTC (diagnostic trouble code) retrieved during the KOEO test need to be tested.

- Ignition OFF.
- Disconnect Transmission vehicle harness C168A .
- Inspect the connector for damaged or pushed out terminals, corrosion, loose wires and missing or damaged seals.
- Ignition ON.
- For the OSS (output shaft speed) and ISSA sensors, measure:

Positive Lead	Measurement / Action	Negative Lead
C168A-7	V	Ground

- For the TSS (turbine shaft speed) and ISSB sensors, measure:

Positive Lead	Measurement / Action	Negative Lead
C168A-8	V	Ground

Is the voltage approximately 9 volts on the suspect circuit?

Yes	GO to D4

No	GO to D2

D2 CHECK THE SENSOR VREF CIRCUIT FOR AN OPEN

- Ignition OFF.
- Disconnect PCM (powertrain control module) C175T .
- Inspect the connector for damaged or pushed out terminals, corrosion, loose wires and missing or damaged seals.
- For the OSS (output shaft speed) and ISSA sensors, measure:

Sample

Is the resistance greater than 10,000 ohms on the suspect circuit?

Yes	 Guided Routine available in the on-line Workshop Manual. After programming the new PCM (powertrain control module) , CARRY OUT the transmission strategy download. REFER to: Transmission Strategy Download (307-01A Automatic Transmission - 10-Speed Automatic Transmission – 10R80, General Procedures).
No	REPAIR the short to ground.

D4 CHECK THE SENSOR SIGNAL RETURN CIRCUIT FOR AN OPEN

- Ignition OFF.
- Disconnect PCM (powertrain control module) C175T .
- Inspect the connector for damaged or pushed out terminals, corrosion, loose wires and missing or damaged seals.
- For the OSS (output shaft speed) sensor, measure:

Positive Lead	Measurement / Action	Negative Lead
C168A-4	Ω	C175T-71

- For the TSS (turbine shaft speed) sensor, measure:

Positive Lead	Measurement / Action	Negative Lead
C168A-1	Ω	C175T-68

Sample

C168A-1	Ω	Ground

- For the ISSA sensor, measure:

Positive Lead	Measurement / Action	Negative Lead
C168A-2	Ω	Ground

- For the ISSB sensor, measure:

Positive Lead	Measurement / Action	Negative Lead
C168A-3	Ω	Ground

Is the resistance greater than 10,000 ohms on the suspect circuit?

Yes	GO to D6

No	REPAIR the short to ground.

D6 CHECK THE SENSOR SIGNAL RETURN CIRCUIT FOR A SHORT TO POWER

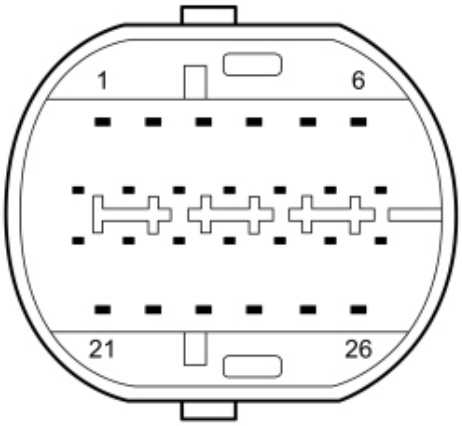
- Ignition ON.
- For the OSS (output shaft speed) sensor, measure:

Positive Lead	Measurement / Action	Negative Lead
C168A-4	V⎓	Ground

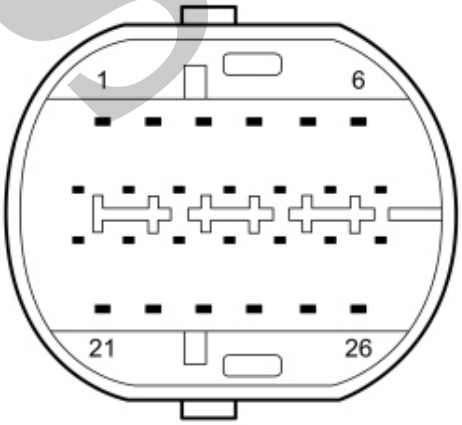
- For the TSS (turbine shaft speed) sensor, measure:

Sample

- Disconnect for ISSB sensor C1837 .
- For the OSS (output shaft speed) sensor, measure:

Positive Lead	Measurement / Action	Negative Lead
 E275612 Transmission component side, pin 7	Ω	C1107-2

- For the TSS (turbine shaft speed) sensor, measure:

Positive Lead	Measurement / Action	Negative Lead
 E275612 Transmission component side, pin 8	Ω	C3106-2

Sample

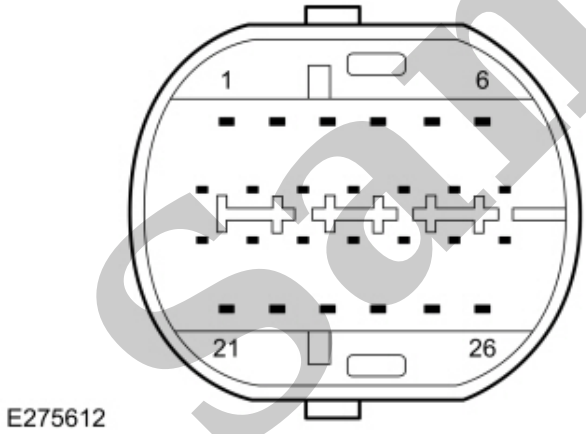
Is the resistance less than 3 ohms on the suspect circuit?

Yes	GO to D8

No	INSTALL a new transmission case wiring harness. REFER to: Transmission Internal Wiring Harness (307-01A Automatic Transmission - 10-Speed Automatic Transmission – 10R80, Removal and Installation).

D8 CHECK THE TRANSMISSION INTERNAL WIRING HARNESS SENSOR VREF CIRCUIT FOR A SHORT TO GROUND

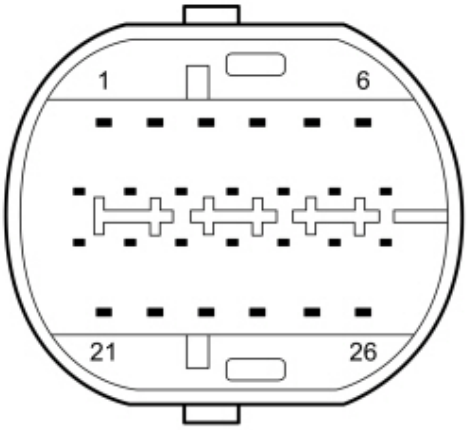
- For the OSS (output shaft speed) and ISSA sensors, measure:

Positive Lead	Measurement / Action	Negative Lead
 Transmission component side, pin 7	Ω	Ground

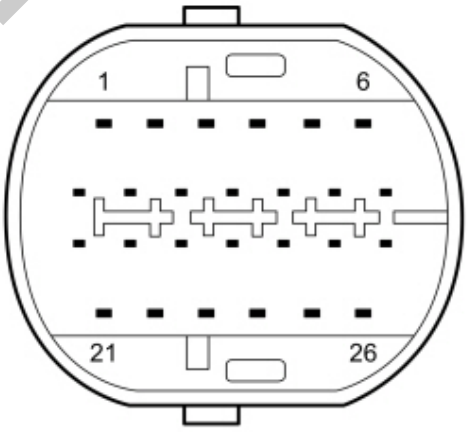
- For the TSS (turbine shaft speed) and ISSB sensors, measure:

Positive Lead	Measurement / Action	Negative Lead

Sample

C1107-1	Ω	 E275612 Transmission component side, pin 4

- For the TSS (turbine shaft speed) sensor, measure:

Positive Lead	Measurement / Action	Negative Lead
C3106-1	Ω	 E275612 Transmission component side, pin 1

- For the ISSA sensor, measure:

Positive Lead	Measurement / Action	Negative Lead

Sample

No	INSTALL new transmission case wiring harness. REFER to: Transmission Internal Wiring Harness (307-01A Automatic Transmission - 10-Speed Automatic Transmission – 10R80, Removal and Installation).

D10 CHECK THE TRANSMISSION INTERNAL WIRING HARNESS SENSOR SIGNAL RETURN CIRCUIT FOR A SHORT TO GROUND

- For the OSS (output shaft speed) sensor, measure:

Positive Lead	Measurement / Action	Negative Lead
C1107-1	Ω	Ground

- For the TSS (turbine shaft speed) sensor, measure:

Positive Lead	Measurement / Action	Negative Lead
C3106-1	Ω	Ground

- For the ISSA sensor, measure:

Positive Lead	Measurement / Action	Negative Lead
C1836-1	Ω	Ground

- For the ISSB sensor, measure:

Positive Lead	Measurement / Action	Negative Lead

Sample

C1836-1	Ω	C175T-69

- For the ISSB sensor, measure:

Positive Lead	Measurement / Action	Negative Lead
C1837-1	Ω	C175T-70

Is the resistance less than 3 ohms on the suspect circuit?

Yes	GO to D12

No	There is a terminal fitment issue. REPAIR any loose, damaged or bent terminals.

D12 CHECK THE SENSOR VREF CIRCUIT FOR VOLTAGE AT THE SENSOR

- Connect PCM (powertrain control module) C175T .
- Ignition ON.
- For the OSS (output shaft speed) sensor, measure:

Positive Lead	Measurement / Action	Negative Lead
C1107-2	V	Ground

- For the TSS (turbine shaft speed) sensor, measure:

Positive Lead	Measurement / Action	Negative Lead
C3106-2	V	Ground

Sample

Normal Operation and Fault Conditions The transmission fluid auxiliary pump keeps the transmission fluid circulating and the transmission engaged during auto start-stop events. The transmission fluid auxiliary pump has an internal microprocessor and communicates with the PCM (powertrain control module) over a PWM (pulse width modulation) circuit with a frequency of 150 Hz and a duty cycle range of 10% to 90%.

DTC Fault Trigger Conditions

DTC (diagnostic trouble code)	Description	Fault Trigger Condition
PCM (powertrain control module) P0C28:00	Electric/Auxiliary Transmission Fluid Pump 'A' Motor Current High: No Sub Type Information	This DTC (diagnostic trouble code) indicates the transmission fluid auxiliary pump communication is OK, the frequency is between 125 Hz and 175 Hz, but a high current is detected (20% to 25% duty cycle).
PCM (powertrain control module) P0C29:00	Electric/Auxiliary Transmission Fluid Pump 'A' Driver Circuit Performance: No Sub Type Information	This DTC (diagnostic trouble code) indicates the transmission fluid auxiliary pump communication is OK, the frequency is between 125 Hz and 175 Hz, but a high current is detected and the pump speed is out of range (75% to 80% duty cycle)
PCM (powertrain control module) P0C2A:00	Electric/Auxiliary Transmission Fluid Pump 'A' Motor Stalled: No Sub Type Information	This DTC (diagnostic trouble code) indicates the PCM (powertrain control module) commanded the transmission fluid auxiliary pump on but did not detect a corresponding increase in pump speed, indicating a stalled pump motor (35% to 40% duty cycle).
PCM (powertrain control module) P0C2C:00	Electric Transmission Fluid Pump Control Module Feedback Signal Range/Performance: No Sub Type Information	This DTC (diagnostic trouble code) indicates the transmission fluid auxiliary pump frequency is between 125 and 175Hz but has an invalid duty cycle, or the frequency is outside of the 125-175Hz range. This can be caused by a loss of power to the transmission fluid auxiliary pump.
PCM (powertrain control module) P0C2D:00	Electric Transmission Fluid Pump Control Module Feedback Signal Low: No Sub Type Information	This DTC (diagnostic trouble code) indicates the transmission fluid auxiliary pump duty cycle is less than 10%. This DTC can set while using output state control to command a pump speed outside of normal operating parameters.

Sample